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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/701,044

11/04/2003

Michael G. Adlerstein

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03/17/2005

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EXAMINER

NGUYEN, VINCENT Q

ART UNIT

PAPER NUMBER

2858

DATE MAILED: 03/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/701,044	Applicant(s) ADLERSTEIN ET AL.	
	Examiner Vincent Q. Nguyen	Art Unit 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 7, 12-17, 20, 22, 23, are rejected under 35 U.S.C. 102(b) as being anticipated by Haimson (4,713,581).

Regarding claim 1, Haimson discloses a circuit comprising (figure 4) a Wheatstone bridge (12) having at least one element thereof thermally responsive to the radio frequency energy passing therethrough differently from radio frequency energy passing through at least one other element of the bridge (Column 8, lines 48-58).

Regarding claims 14, 15, Haimson discloses a network having (figure 1) four nodes (1-4); and four lumped electrical elements (Haimson does not explicitly shown but inherent for any RF bridge), each one being connected between a different pair of the four nodes; and wherein at least of the one four electrical elements is thermally responsive to the radio frequency energy passing through the at least one other one of the four electrical elements of the network (12) (Column 8, lines 48-58).

Regarding claims 2, 7, 20, Haimson discloses a circuit comprising (Figure 4) a Wheatstone bridge (12) having a pair of parallel circuit paths disposed between a pair of input nodes (It is inherent for any Wheatstone bridge includes the prior art of Haimson

to have a pair of parallel circuit paths disposed between inputs nodes), each path (A_4 , A_1 , A_2) having a pair of serially connected elements (Haimson does not shown but inherent in any bridge; basically a resistor connecting A_4 to A_1 in series with A_1 to A_2), each pair of elements in each one of the paths being connected at a corresponding one of a pair of output nodes (A_4 , A_2) at least one element in a first one of the pair of paths being thermally responsive to the radio frequency energy passing therethrough differently from radio frequency energy passing through at least one other element in the other one of the pair of paths (Column 8, lines 48-58).

Regarding claims 3, 16, Haimson discloses a first one of the input nodes (11) is coupled to a source of the radio frequency energy (10) and to a source of dc voltage (The source 10 must be connected to DC source to receive power to drive).

Regarding claims 4, 17, Haimson discloses a feedback loop (13) responsive to a voltage produced across the output node for providing a control voltage to the first one of the pair of input node (11).

Regarding claims 12, 22, Haimson discloses a method comprising the steps of providing a Wheatstone bridge (12) having a pair of parallel circuit paths disposed between a pair of input nodes (A_1 , A_2), each path having a pair of serially connected elements (Haimson does not shown but is inherent for any bridge), each pair of elements in each one of the paths being connected at a corresponding one of a pair of output nodes (A_2 , A_4), at least one element in a first one of the pair of paths being thermally responsive to the power passing therethrough differently from power passing through at least one other element in the other one of the pair of paths (Column 8, lines

Art Unit: 2858

48-58) and wherein a first one of the input nodes is coupled to a source of the radio frequency energy (10) and to a source of dc voltage (Source 10 must connect to DC source to receive power to drive); and a feedback loop (13) responsive to a voltage produced across the output node for providing a control voltage to the first one of the pair of input node (11); applying a first type (From 18) of power to the bridge with the feedback loop providing a voltage to the first one of the node and with such bridge being in a balanced condition within the bridge; and applying a second type of power to the bridge with the bridge becoming imbalanced from such applied second power and with the feedback loop changing the voltage to the first node, such changed voltage providing an indication of the application of the second type of power (The balance processor 18 applies the first, the second type to balance bridge) (Column 7, lines 27-40).

Regarding claims 13, 23, Haimson discloses dc power and the second power is RF power (Element 10 is RF source, power supplied from source 10 must be RF power).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 6, 8-11, 18, 19, 21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Haimson (4,713,581) in view of Kanke et al. (5,681,989).

Regarding claims 5, 8, 18, 21, Haimson does not disclose capacitors parallel with resistors.

Kanke et al. discloses a system similar to that of Haimson and further discloses the first one of the paths (13, 11) includes a capacitor (17) disposed in shunt with an electrical element having an electrical property varying with the radio frequency energy passing through such electrical element (Frequency varies with temperature) for the purpose of stabilizing the operation of the hot wire driving circuit (Column 8, lines 17-19).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the capacitor as taught by Kanke et al. into the system of Haimson et al. because it would have been desirable to stabilize the operation of the hot driving circuit.

Regarding claims 6, 9-11, 19, Haimson discloses the electrical property (In bridge 12) is electrical resistance.

Response to Arguments

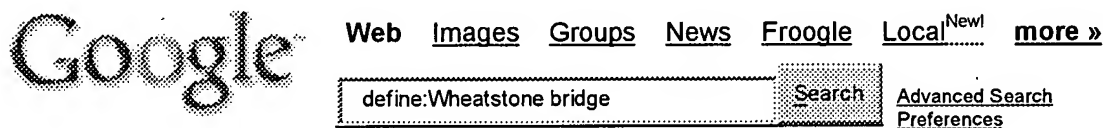
5. Applicant's arguments filed 3/8/2005 have been fully considered but they are not persuasive.

In response to Applicant's argument that Haimson discloses the RF bridge not the Wheatstone bridge and to support the argument Applicant cited the definition from a

Art Unit: 2858

book entitled: University Physics by Francis Weston Sears and Mark W. Zamansky, published 1956, section 28-7, page 499-500. Further, Applicant takes an example of an RF bridge described in the article "A Traveling Wave Linear Accelerator With R.F. Power Feedback, and An Observation of R.F. Absorption by Gas in Presence of a Magnetic Field," is a rat race shown in figure 2 of the article." and alleged that is clearly not a Wheatstone bridge.

Examiner has conducted search (See also paper attached) and obtained the information as follow:



Web

Tip: Try Google Answers for help from expert researchers

Definitions of **Wheatstone bridge** on the Web:

- Another name for Full-bridge.
www.campbellsci.com/glossary.html
- A network of four resistances, an emf source, and a galvanometer connected such that when the four resistances are matched, the galvanometer will show a zero deflection or "null" reading.
www.flw.com/define_w.htm
- A network of four resistances, an emf (voltage) source, and an indicator connected such that when the four resistances are matched, the indicator will show a zero deflection or "null" reading. Prototype of most other bridge circuits.
www.ets-daq.com/glossary.htm
- A device used for the measurement of resistance.
www.ilnorplex.com/glossary.htm
- a four arm resistance bridge having 1, 2 or 4 variable resistances. It is commonly used with resistance based sensors, especially strain gauges and RTDs. It is effective in suppressing to zero point thus allowing higher amplification and for temperature compensation
www.capgo.com/Resources/Misc/SensorGlossary.html

- a bridge used to measure resistances
www.cogsci.princeton.edu/cgi-bin/webwn

With the definitions above, the Examiner does not see why the RF bridge (Element 12 of Haim) is not a Wheatstone bridge?

It is clearly that RF bridge (Element 12 of Haimson) is a Wheatstone bridge because a network of four resistances (Arms 1-4), an emf source, and a galvanometer connected such that when the four resistances are matched, the galvanometer will show a zero deflection or "null" reading (Column 1, lines 40-51) (Haim does not explicitly disclose a "null" but such a configuration is well known for a null since Wheatstone bridge is a principle of voltage divider).

Patent No. 6,486,679 (Holt) discloses an RF bridge (Figure 1). The figure is simply called RF bridge (Column1, lines 13-15). Nevertheless, it is understood that the RF bridge is a Wheatstone bridge because Holt said that: "Figure 1 is basic Wheatstone bridge" (column 3, lines 48-50).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

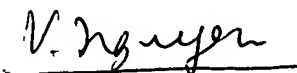
shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q. Nguyen whose telephone number is (571) 272-2234. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Vincent Q. Nguyen
Primary Examiner
Art Unit 2858

March 11, 2005